

- Yellow of tergites produced forward only in the middle; hair of scutellum wholly pale; wings smoky.....*nigriceps*
- 5. Black bands on tergites two to five inclusive broken by the forward production of yellow; pile of dorsum of abdomen with considerable amount of black on every segment; hair of vertex little, if any, longer than second antennal segment and very sparse; hind tibia of female bearing an apical process extending along more than half the length of the metatarsus which is long and arcuate.....*pacifica*
- Black bands on tergites continuous; pile of dorsum of abdomen white except for black hairs on fifth tergite; longer hair on vertex one-third to one-half longer than second antennal segment; pile generally very long and dense; hind tibia and metatarsus of female not as above.....*heterotricha*

A SYNOPSIS OF THE GENUS EUPARAGIA

(*Hymenoptera, Vespidae, Euparagiinae*)

BY RICHARD M. BOHART

Berkeley, California

The genus *Euparagia* Cresson is apparently limited in distribution to portions of western North America. Its species are all extremely rare and are represented in few collections. The genus contains at present two species, *maculiceps* (Cameron) and *scutellaris* Cresson, the former recorded from Mexico and New Mexico, and the latter from California and Nevada.

While examining a number of Vespidae collected by Mr. N. W. Frazier in the Lone Pine, Inyo County, region of California, two male specimens of *Euparagia* were discovered which differed in several important characters from specimens of *Euparagia scutellaris* in the author's collection. A subsequent examination of the types of *scutellaris* at the Academy of Natural Sciences of Philadelphia, and the only known female of *maculiceps* at the United States National Museum, confirmed the opinion that the Lone Pine species was new. On account of the rarity and interesting habits of this genus, a synopsis of its species is given including the new one and additional records of the others.

A discussion of the generic characters has been well presented by Bradley in his "Taxonomy of the masarid wasps, including a monograph on the North American species," Univ. Calif. Publ., Ent. I: 370-434, 1922, (12 figs. of *Euparagia*). The combination of simple tarsal claws, three cubital cells in the forewing, elongate anal lobe of the hind wing, unplaited wings, sessile abdomen, simple 13-segmented male antennæ which are without a terminal club, and the remarkable oxybelid-like facies will serve to distinguish the genus. It should be noted that the characters given by Bradley for the anterior femur of the male are not universal in the genus and therefore should be stricken out of the generic description.

KEY TO THE SPECIES OF EUPARAGIA.

1. Vertex behind the ocelli with two prominent humps, parted by a sharp furrow, and with two weak humps near the inner margins of the compound eyes; front and vertex, save for the smooth humps, coarsely, irregularly punctate; pronotum coarsely punctate*maculiceps*
- Vertex without humps; vertex and front uniformly granular-punctate, pronotum finely punctate.....2
2. Front femur of male produced knob-like at the base; male clypeus and mesonotum weakly silvered, the silvering especially on the latter with a slight yellowish tint; wings slightly but distinctly yellow-stained; pale coloration, of the thorax at least, yellow; abdomen without reddish markings.....*scutellaris*
- Front femur of male slightly swollen at the base but not produced knob-like; male clypeus and mesonotum heavily silvered obscuring the puncturation; wings perfectly clear; pale coloration of the body ivory-white; abdomen with reddish markings.....*platiniceps*

EUPARAGIA MACULICEPS (Cameron)

Plesiomasaris maculiceps Cameron, 1904, male. Trans. Am. Ent. Soc., 30:267.

Odynerus simplicipes Cameron, 1905, male. Trans. Am. Ent. Soc., 31:380.

Psiloglossa simplicipes Rohwer, 1909, female. Ent. News., 20:357.

Euparagia maculiceps Bradley, 1922, male, female., Univ. Calif. Publ. Ent., 1:384.

New Mexico: Las Cruces, August 31, one female at flowers of *Solidago*, C. H. Townsend, (*simplicipes* Roh. type, U. S. N. M.); Mexico: Guerrero, 3000 ft., Godman and Salvin, (*maculiceps* and *simplicipes* Cam. types, British Museum).

EUPARAGIA SCUTELLARIS Cresson

Euparagia scutellaris Cresson, 1879, male, female. Proc. Acad. Nat. Sci. Phila., Ent. Sec., 6:6 (genotype by monotypy).

Euparagia maculifrons Bradley, 1922, Univ. Calif. Publ. Ent., 1:384 (in error).

Euparagia scutellaris Bradley, 1922, male, female. Univ. Calif. Publ. Ent., 1:385.

Euparagia scutellaris F. X. Williams, 1927, habits. Pan-Pac. Ent., 4:38-39.

An account of the nesting habits has been given by F. X. Williams who records it as "nesting in the hard ground, in one case on the slope of an exposed gravelly pit; the burrows which were not deep, terminating in one or more cells, and were surmounted by a delicate and slender curved tube of clay." The cells were provided with semi-paralyzed curculionid larvæ. Altho the nests were not observed, a pair of this species was taken by the author on Mt. Diablo, California, flying very low above a boggy area near a spring on an exposed hillside.

Nevada: two males, two females (type specimens, A. N. S. P.). California: Lake Tahoe, July, 1925, females (F. X. Williams); Sobre Vista, Sonoma County, one female (J. A. Kusche); Mt. Diablo, 500 ft. elev., one pair, May 12, 1937 (R. M. Bohart); Yosemite Natl. Park, one male, Aug. 2, 1930 (E. C. Zimmerman); Santa Cruz Mts., one female, coll. U. S. N. M.; Santa Clara County (C. F. Baker); Palo Alto, one male, May 31, 1922 (S. F. Flanders); Kaweah, Tulare County, one male, June 21, 1937; Claremont, four males, one female (C. F. Baker).

Euparagia platiniceps Bohart, new species

This species is most closely related to *scutellaris* but can easily be distinguished by the characters given in the key. The front

femur of *scutellaris* male is produced at the base into a knob-like tooth below and a small swelling behind. Also the front trochanter has a stout curved finger-like terminal process. In *platiniceps* the front femur is merely slightly swollen at the base and the process of the trochanter is shorter, very slender, and sharply pointed. The posterior half of the propodeum is dull and closely punctured in *scutellaris* but shining and sparsely punctured in *platiniceps*. The pubescence of the former is much more sparse and of a less brilliant white-silver color than that of the latter, the front and clypeus of which are densely platinum-hirsute. The male genitalia of the two species do not appear to offer significant differences.

Male. Black, the following parts ivory-white: an inferior spot on underside of first antennal segment, mandibles except at apex, clypeus except marginally all around, a spot on vertex adjacent to compound eye, dorsal surface of pronotum except latero-posterior margin, outer margin of tegula, a spot beneath fore tegula on mesothorax, a median posterior spot on mesoscutum, a large central spot on mesoscutellum, outer apices of front and middle femora, bases and apices of all tibiae, outer bases of all tarsi, irregular apical bands on first six abdominal tergites, the first interrupted by a median line, median spot on seventh tergite, double median spots on sternites two to five; the following parts reddish brown: antennal flagellum, clypeus at apex, marks on apex of femora, tibiae and most of tarsi, central spot of fore tegula, a lateral mark on first abdominal tergite, sub-lateral marks on tergites two to six grading into black. Wings perfectly clear, hyaline, stigma and veins dark brown. Head and thorax thickly covered with a fine platinum-white silky pubescence, abdomen with a similarly colored but sparse short pubescence dorsally. Punctuation very fine, the punctures almost contiguous except on propodeum which is shining thruout. Head broader than thorax, somewhat heart-shaped as seen from the front, greatest width at the emargination of the eyes; third antennal segment about twice as long as second; clypeus sharply bidentate apically, mandibles weakly tridentate. Thorax as seen from above almost as broad as long, pronotal angles rounded; fore femur slightly swollen at the base but evenly rounded, untoothed; process of fore trochanter very slender and sharply pointed. Venter of abdomen almost perfectly flat, first sternite without a median furrow.

Holotype, male, Lone Pine, Inyo County, California, June, 1937, N. W. Frazier, collector, deposited in the California Academy of Sciences (No. 4693). Paratype, one male, same data as holotype, in collection of author.